

Application No. 10/623,255
Response to Office Action

Customer No. 01933

Listing of Claims:

1. (Currently Amended) A solid electrolytic capacitor comprising:

a capacitor element including a porous sintered compact made of a valve action metal and having an anode lead, and wherein a dielectric, an electrolyte layer and a cathode layers layer are successively formed on a surface of the porous sintered compact;

an anode terminal connected to the anode lead of said capacitor element;

10 a cathode terminal connected to the cathode layer; and

a casing material covering said terminals and said capacitor element;

wherein:

15 said anode terminal includes a first plate piece having first and second ends, a second plate piece having third and fourth ends, and a third plate piece having fifth and sixth ends, said first, second and third plate pieces being are formed of continuous members,

20 said first and said second plate pieces are placed at an interior of said casing material,

said second and said third plate pieces are folded onto each other so as to be formed integrally.

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25 said third plate piece having one includes (i) a first surface exposed to the an exterior of said casing material and forming which forms a mounting surface defined by said the fifth and sixth ends communicated to each other and the other and (ii) a second surface opposing the exposed surface,

30 said first end of said first plate piece having the first end is arranged in proximity one of adjacent to or in butt on and abutting said other second surface so as to intersect in the shape of letter T with said third plate piece to form a T shape, the said second end of said first plate piece being is extended and joined to the anode lead, and

35 said second first end and the fourth end being are respectively connected to the third end and the fifth end.

2. (Currently Amended) A The solid electrolytic capacitor as defined in claim 1, wherein said second plate piece is arranged nearer to said cathode layer than said third plate piece.

3. (Currently Amended) A The solid electrolytic capacitor as defined in claim 1, wherein said first plate, said second plate and said third plate of said anode terminal is are formed of a single metal plate.

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4. (Currently Amended) A The solid electrolytic capacitor as defined in claim 1, wherein said cathode terminal includes a fourth plate piece and a fifth plate piece which ~~have their~~ each having an inner ~~ends~~ end respectively connected to an interconnection portion so as to form a step through the interconnection portion, such that the fourth plate piece and the fifth plate piece ~~and to become~~ are parallel to each other, wherein one surface of said fourth plate piece being is joined to said cathode layer, while ~~one~~ and a surface of said fifth plate piece ~~remote which is farthest~~ from said cathode layer forms a mounting surface exposed to the exterior of said casing material.

5. (Currently Amended) A The solid electrolytic capacitor as defined in claim 4, wherein said fifth plate piece extends ~~in a direction of coming~~ away from said anode terminal with respect to said fourth plate.

6. (Currently Amended) A solid electrolytic capacitor comprising:

a capacitor element including a porous sintered compact made of a valve action metal and having an anode lead exposed to the ~~an~~ exterior of one end thereof, and wherein a dielectric, an

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electrolyte layer and a cathode layer are successively formed on a surface of the porous sintered compact;

an anode terminal connected to the anode lead of said capacitor element;

10 a cathode terminal connected to the cathode layer; and a casing material covering said terminals and said capacitor element,

wherein said anode terminal includes:

15 a first plate piece having a joint with said anode lead as ~~its~~ one a first end surface of the anode terminal and extending from the joint toward a mounting surface in a perpendicular direction with respect to the mounting surface;

20 a second plate piece bent at ~~about~~ substantially 90 degrees at the mounting surface so as to extend toward a cathode of the capacitor; and

a third plate piece formed ~~in~~ such ~~a~~ way that a side of said mounting surface is folded back toward an anode of the capacitor by bending at ~~about~~ substantially 180 degrees;

25 wherein said third plate piece ~~extending~~ extends to an end surface of said casing material toward the anode of the capacitor and ~~being~~ is perpendicularly cut at the an end surface of said casing material so as to define a cut section that forms another a second end surface of said anode terminal; and

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30 wherein the second and third plate pieces ~~being~~ are pressure-welded to each other so as to become integral.

7. (Currently Amended) A The solid electrolytic capacitor as defined in claim 6, wherein a resin film is formed on said second and third plate pieces, and said second and third plate pieces are joined to each other through the resin film by the pressure-welding.

8. (Currently Amended) A method of manufacturing a solid electrolytic capacitor, said solid electrolytic capacitor including: (i) a capacitor element containing a porous sintered compact made of a valve metal and having an anode lead, and wherein a dielectric, an electrolyte layer and a cathode layer are successively formed on a surface of the porous sintered compact; (ii) an anode terminal connected to the anode lead of the capacitor element; (iii) a cathode terminal which is connected to the cathode layer; and (iv) a casing material covering the terminals and the capacitor element, said method comprising ~~the steps of:~~

preparing as the anode terminal a series of members in which a first plate piece is continuous to a third plate piece through a second plate piece;

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15 ~~forming the series of members into a shape in which~~
~~fabricating a T shape from the series of members by punching the~~
~~series of members based on a press work and a bending work, such~~
~~that the first and third plate pieces intersect in a to form~~
~~the T shape, of letter T in a state where the first plate piece~~
20 ~~extends to said anode lead, and the T shape does not include a~~
~~connection part for connecting the first and third pieces; and~~
~~forming the second and third plate pieces into a state where~~
~~bending and crushing said second and third plate pieces to fold~~
~~said second and third plate pieces onto each other such that one~~
25 ~~surface of the third plate piece is exposed to the an exterior of~~
~~the casing material as a mounting surface of the solid~~
~~electrolytic capacitor.~~

9. (Currently Amended) A ~~The~~ method of manufacturing a solid electrolytic capacitor as defined in claim 8, wherein the second plate piece is arranged nearer to said cathode layer than said third plate piece.

10. (Currently Amended) A ~~The~~ method of manufacturing a solid electrolytic capacitor as defined in claim 8, wherein said ~~first plate, said second plate and said third plate of said anode~~ terminal ~~is are~~ formed of a single metal plate.

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11. (Currently Amended) A The method of manufacturing a solid electrolytic capacitor as defined in claim 8, wherein said cathode terminal ~~is formed of~~ includes a fourth plate piece and a fifth plate piece ~~which have each having an inner ends~~ end respectively connected to an interconnection portion so as to form a step through the interconnection portion, such that the fourth plate piece and the fifth plate piece and to become are parallel to each other,

10 wherein one surface of the fourth plate piece being is joined to said cathode layer, while one and a surface of the fifth plate piece ~~remote~~ which is farthest from said cathode layer is set as forms a mounting surface exposed to the exterior of said casing material.

12. (Currently Amended) A The method of manufacturing a solid electrolytic capacitor as defined in claim 11, wherein said fifth plate piece is formed so as to extend ~~in a direction of coming away from said anode terminal with respect to said fourth plate.~~

13. (Currently Amended) A method of manufacturing a solid electrolytic capacitor including: (i) a capacitor element containing a porous sintered compact made of a valve action metal and having an anode lead exposed to the exterior of one end

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5 thereof, and wherein a dielectric, an electrolyte layer and a cathode layer are successsively formed on a surface of the porous sintered compact; (ii) an anode terminal connected to the anode lead of said capacitor element; a cathode terminal connected to the cathode layer; (iii) and a casing material covering said 10 terminals and said capacitor element, said method comprising the steps of:

forming as said anode terminal:

a first plate piece having a joint with said anode lead as its one a first end surface of the anode terminal and 15 extending from the joint toward a mounting surface in a perpendicular direction [(,)] with respect to the mounting surface;

20 a second plate piece bent at about substantially 90 degrees at the mounting surface so as to extend toward a cathode [(,)] of the capacitor; and

a third plate piece formed in such a way that a side of said mounting surface is folded back toward an anode of the capacitor by bending at about substantially 180 degrees;

25 extending said third plate piece to an end surface of said casing material toward the anode of the capacitor;

cutting perpendicularly at the an end surface of said casing material so as to define a cut section that forms another a second end surface of said anode terminal; and

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pressure-welding the second and third plate pieces to each
30 other so as to become integral.

14. (Currently Amended) ~~A~~ The method of manufacturing a solid electrolytic capacitor as defined in claim 13, wherein a resin film is formed on said second and third plate pieces, and said second and third plate pieces ~~being~~ are joined to each other through the resin film by the pressure-welding.

15. (New) The solid electrolytic capacitor as defined in claim 1, wherein a resin film is formed on said second and third plate pieces, and said second and third plate pieces are joined to each other through the resin film by pressure-welding.

16. (New) The method of manufacturing a solid electrolytic capacitor as defined in to claim 8, wherein a resin film is formed on said second and third plate pieces, and said second and third plate pieces are joined to each other through the resin film by pressure-welding.